

Attachment B

Amended Claims - Clean Copy

1. Pigments of silica-iron oxide comprising a silica component (SiO_2) obtained from microsilica, having a ratio of silica that ranges between 70 and 98% by weight, and a ratio of iron oxide that ranges between 2 and 30% by weight.
2. A process for obtaining pigments of claim 1, comprising the following steps:
 - s) blending majority and minority raw materials containing microsilica and iron oxide, respectively, to form a blend of raw materials,
 - t) agglomerating the blend of raw materials,
 - u) calcinating in an oven the agglomerated blend with a thermal cycle at temperatures between 800 and 1300°C, with residence times ranging between 1 and 24 h, to obtain a pigment,
 - v) blending the pigment to obtain a blend of pigment having particles with a particle size,
 - w) reducing the particle size of the obtained blend of pigment, and
 - x) final blending with control of chromaticity coordinates of the pigment.
3. A process according to claim 2, in which stages a) and/or b) are carried out in dry conditions.
4. A process according to claim 2, in which stages a) and/or b) are carried out in wet conditions.
5. A process according to claim 3, in which the blend from stage a) is carried out by milling.
6. A process according to claim 4, in which the mixture from stage a) is carried out by dispersion.

7. A process according to claim 5, in which the agglomeration of stage b) consists of a granulation.
8. A process according to claim 6, in which the agglomeration of stage b) consists of drying by atomization.
9. A process according to claim 2, in which, before stage c) there is a prior pre-calcination step.
10. A process according to claim 2, in which, after stage c), there is a cooling step, prior to blending of the resulting pigment.
11. A process according to claim 2, in which step e) consists of grinding or milling.
12. Pigments obtained according to the process of claim 2.
13. A process for the manufacture of inorganic pigments and/or colorants, comprising adding microsilica as a source of SiO_2 to said inorganic pigments and/or colorants during manufacture thereof.
14. (Canceled)
15. A process according to claim 13, wherein the silica is obtained from condensation of gases evolved during the manufacture of silicon metal and/or alloys thereof.
16. A process for the manufacture of compositions of enamels, glasses, ceramics, cements, plastics, laminates, graphic inks or rubber, comprising adding the pigments of claim 1, alone or in blends with other materials, as ingredients to said compositions of enamels, glasses, ceramics, cements, plastics, laminates, graphic inks or rubber.
17. A process for decorating the surface of enamels, glasses, ceramics, cements, plastics, laminates, graphic inks or rubber, comprising using the pigments of claim 1, alone or in blends with other materials, in the surface decoration of enamels, glasses, ceramics, cements, plastics, laminates, graphic inks or rubber.
18. A ceramic product including in its composition the pigments of claim 1.

19. A ceramic product in accordance with claim 18, wherein the product consists of a porcelain stoneware.

20. A porcelain stoneware in accordance with claim 19, comprising chromatic coordinates (Hunter-LAB) in the following ranges: $L = 36-46$, $a = 10-18$ and $b = 7-11$, for a percentage pigment of 2% that gives a colour of red-orange tone.

Attachment C

Original PCT Claims

CLAIMS

1. Pigments of silica-iron oxide characterised in that the silica component (SiO_2) is obtained from microsilica, having a ratio of silica that ranges between 70 and 98% by weight, while the ratio of iron oxide ranges between 2 and 30% by weight.

2. A process for obtaining pigments of claim 1, characterised in that it comprises the following steps:

- 10 a) Blending the majority and minority raw materials, containing microsilica and iron oxide
- b) Agglomerating of the resulting blend of raw materials from the previous stage
- 15 c) Calcinating in an oven the agglomerated blend obtained in the previous stage with a thermal cycle at temperatures comprised between 800 and 1300°C, with residence times ranging between 1 and 24 h,
- 20 d) Blending the pigment obtained in the previous calcination step,
- e) Reducing the particle size of the obtained blend of pigment,
- f) Final blending with control of the chromaticity coordinates of the obtained pigment,
- 25 g) Dosing and packaging.

3. A process according to claim 2, in which stages a) and/or b) may be carried out in dry conditions.

4. A process according to claim 2, in which stages a) and/or b) may be carried out in wet conditions.

30 5. A process according to claims 2 and 3, in which the blend from stage a) is carried out by milling.

6. A process according to claims 2 and 4, in which the mixture from stage a) is carried out by dispersion, preferably in water.

7. A process according to claims 2, 3 and 5, in which the agglomeration of stage b) consists of a granulation.

8. A process according to claims 2, 4 and 6, in which the agglomeration of stage b) consists of drying by atomisation.

9. A process according to claims 2 to 8, in which, before stage c) there is a prior pre-calcination step.

10. A process according to claims 2 to 9, in which, after stage c), there is a cooling step, prior to blending of the resulting pigment.

11. A process according to claims 2 to 10, in which step e) preferably consists of grinding or milling.

12. Pigments obtained according to the process of claims 2 to 11.

13. Use of microsilica as a source of SiO_2 in the manufacture of inorganic pigments and/or colorants.

14. Use of fumed silica as a source of SiO_2 in the manufacture of inorganic pigments and/or colorants.

15. Use according to claims 13 and 14, characterised in that the source of silica is obtained from condensation of gases evolved during the manufacture of silicon metal and/or alloys thereof.

16. Use of the pigments of claims 1 or 12, alone or in blends with other materials, as integrants in the compositions of enamels, glasses, ceramics, cements, plastics, laminates, graphic inks and rubber.

17. Use of the pigments of claims 1 or 12, alone or in blends with other materials, in the surface decoration of enamels, glasses, ceramics, cements, plastics, laminates, graphic inks and rubber.

18. A ceramic product characterised in that it includes in its composition the pigments of claims 1 or 12.

19. A ceramic product in accordance with claim 18, characterised in that it consists of a porcelain stoneware.

20. A porcelain stoneware in accordance with claim 19, characterised in that it shows chromatic coordinates (Hunter-LAB) in the following ranges: $L = 36-46$, $a = 10-18$ and $b = 7-11$, for a percentage pigment of 2% that gives a
5 colour of red-orange tone.